UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

APR 18 2014

Amy Lueders
Bureau of Land Management
1340 Financial Boulevard
Reno, Nevada 89520

Subject: Final Environmental Impact Statement for the Arturo Mine Project, Elko County, Nevada [CEQ #20140066]

Dear Ms. Leuders,

The U.S. Environmental Protection Agency has reviewed the Final Environmental Impact Statement (FEIS) for the Arturo Mine Project. Our review and comments are provided pursuant to the National Environmental Policy Act, the Council on Environmental Quality Regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act; as well as Section 404 of the Clean Water Act.

EPA's review of the Draft EIS for this project found that there was inadequate information to support the DEIS' assertions that the project would not pose a risk to water quality as a consequence of mine facility discharges (seepage). The DEIS identified waste rock seeps associated with the existing Dee Mine facilities that are currently releasing water that exceeds applicable reference values and water quality standards, yet concluded that no such seepage would occur from the proposed expansion. EPA determined that additional source controls and/or a clearly defined adaptive management approach may be needed to prevent waste rock seepage, heap leach draindown, pit lake infiltration and existing facility leachate from entering adjacent surface or ground water sources and causing water quality violations. In addition, we had significant concerns about potential Clean Water Act Section 404 and Clean Air Act compliance issues. For these reasons, EPA rated the Arturo Mine Project DEIS as "3 – Inadequate Information".

While the Final EIS provides additional information that addresses some of the issues we raised, EPA has determined that it is unresponsive to our core concerns and, therefore, is inadequate to meet the purposes of the National Environmental Policy Act and EPA's review. Specifically, the document continues to lack adequate information, monitoring, and mitigation to demonstrate that surface water quality will be appropriately protected under the action alternatives. For numerous comments that we submitted on the DEIS, particularly those related to water quality impacts and protections, either no response was provided or the response that was provided did not substantively address the issue raised. To address these outstanding issues, which are discussed further in the enclosed Detailed Comments, we recommend that Bureau of Land Management formally supplement the Final EIS in accordance with the regulation at 40 CFR 1502.9(c).

Based on our April 11, 2014 phone conversation with BLM's Tuscarora Field Office Manager Rich Adams and staff, Barrick-Dee Mining Venture, Inc., and the EIS contractor, AECOM, EPA understands that, in response to our concerns relating to surface water quality monitoring in Boulder Creek, BLM intends to require the installation of a water quality monitoring location near the southern (downstream) margin of the project area. EPA appreciates the addition of this monitor, which should help to ensure that any unanticipated discharges to or degradation of surface water quality will be quickly identified and rectified. The Supplemental EIS and the Record of Decision for the proposed project should reflect the commitment made by BLM to require this monitor location.

We appreciate the opportunity to review this FEIS and look forward to continuing to work with BLM on this and future mining projects under our renewed umbrella Memorandum of Understanding for cooperating on mining EISs. If you have any questions, please call me at (415) 972-3873 or have your staff contact Carter Jessop, our lead NEPA reviewer for this project, at (415) 972-3815.

Sincerely,

Kathleen H. Johnson, Director
Enforcement Division

Enclosures: EPA's detailed comments on the Arturo Mine FEIS

cc: Richard Adams, Manager, BLM Tuscarora Field Office
John Daniel, BLM Tuscarora Field Office
Neil Kornze, BLM Headquarters
Colleen Cripps, Nevada Division of Environmental Protection
Alan Jenne, Nevada Division of Wildlife

USEPA Comments on the Arturo Mine Project Final Environmental Impact Statement
Elko County, Nevada – April 18, 2014

Surface Water Quality

It is unclear how waste rock facility design would preclude exacerbation of existing seepage.
While the FEIS provides additional details that support predictions that the proposed waste rock disposal facilities would not affect groundwater quality in the post-closure period, the potential for the Waste Rock Disposal Facilities to affect the surface water quality of Boulder Creek remains unclear. In light of the ongoing mine-influenced seepage emanating from existing Dee Mine facilities and the proximity of the proposed facilities to Boulder Creek, a robust analysis is needed to demonstrate that the observed seepage rates and chemistries would not be exacerbated by the proposed expansion. Given existing site conditions and based upon the information provided in the FEIS and the Revised Waste Rock Management Plan (Schafer 2013), EPA believes that seeps AR09, AR05 and AR36 could experience an increase in flow under the proposed action. During our April 11, 2014 conference call, BLM informed EPA that much is unknown about the design of the existing WRDFs, due to their age. BLM subsequently sent EPA additional information about the historical operations at the site. While we appreciate this information, the documents provided add little to our understanding of the existing WRDF design. The extent to which the design of the new facilities differs from the existing facilities remains largely unknown or undisclosed.

> **Recommendation:** The supplemental EIS should provide a direct comparison between the existing WRDF designs – to the extent known -- and the proposed designs, in order to demonstrate the basis for BLM's predictions that the latter facilities will not affect surface water quality. For example, information such as the type and depth of cover materials would be useful. Where information about the existing WRDF facilities is incomplete or unavailable, BLM should address such gaps in accordance with the requirements at 40 CFR 1502.22.
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> Provide a mitigation plan for implementation in the event that the impoundment at AR09/AR36 overflows into Boulder Creek. The plan should consider possible remedies and the anticipated efficacy of those remedies.

Available monitoring data do not appear to have been fully utilized.
In our comments on the DEIS, we noted that most of the existing Dee Mine facilities have been reclaimed, and reclamation monitoring is ongoing, yet the DEIS contained little discussion or information related to the completed reclamation and closure monitoring. Based upon the monitoring program described in the FEIS, substantial data should be available to the BLM and the project proponent regarding existing facility performance and seepage chemistry. While BLM added a column to table 3.4-2 indicating whether the seeps identified therein are likely being affected by discharge from nearby mine facilities, no context or explanation is provided for this new information. It is unclear which existing facility is responsible for this mine-influenced water in each seep.

> **Recommendation:** Please provide further context for the modifications made to table 3.4-2. Describe which existing facilities are believed to be contributing to each of the mine-water

influenced seeps. Indicate what volume or proportion of the water in these seeps is natural in origin and what volume is likely mine influenced.

Monitoring and Mitigation

Documentation of monitoring commitment is needed.
In our March 18, 2013 comments on the DEIS, EPA pointed out that the nearest surface water quality monitoring location downstream of the project area is "BC-A". This monitor is more than 3 miles downstream of the southern edge of the project area after the confluence of Boulder Creek with Rodeo Creek. Given its location, monitor location BC-A would likely be ineffectual in alerting the project proponent and relevant regulatory agencies to possible discharge events or to minor to moderate water quality impacts. BLM's Response to Comments provided no response to this comment (F2-3); however, during a conference call held on April 11, 2014 between BLM, EPA, Barrick-Dee Mining Venture, Inc. and BLM's contractor AECOM, we were informed that BLM intends to require Barrick to install a monitoring station in Boulder Creek just upstream of the Elko/Eureka County line. EPA appreciates the addition of this monitor, which should help to ensure that any deleterious effects of the proposed expansion are quickly identified and rectified.

> **Recommendation:** Include in the Supplemental EIS and the Record of Decision a commitment to the installation of the above mentioned monitor in Boulder Creek. The monitoring to be conducted at this location should be determined in accordance with the most stringent applicable water quality standards. This monitoring location should be incorporated into the Arturo Mine Monitoring and Mitigation Plan (Appendix B of the FEIS), either as an additional monitor location under measure SW-2 or as a new monitoring measure. The range of specific actions to be taken in the event that water quality impacts are observed should be stipulated.

FEIS cites outdated State water quality standards; detection/reporting limits are too high to ensure compliance with applicable standards.
EPA has continuing concerns related to the applicable surface water quality standards for Boulder Creek and the detection or reporting limits for various constituents to be monitored. For example, in our comments on the DEIS, we noted that selenium has a detection (or reporting) limit about ten times the Class C surface water quality standard specified in Table 3.4-5. We also noted that the detection (or reporting) limits for copper, cadmium and lead were above the Class C standard provided.

Since the writing of our comment letter on the DEIS, it has come to the attention of this office that NDEP revised its water quality standards in 2010, abolishing the class waters system in favor of specific standards for each water body. The Class C standards referenced in both the DEIS and the FEIS are no longer in use and are not applicable.

In order to protect Aquatic Wildlife and other beneficial uses established by the State of Nevada for natural streams, potential water quality impacts from the Arturo mine site should be evaluated based on established applicable standards. Nevada Administrative Code 445A.120 states that "NAC 445A.070 to 445A.2234, inclusive, apply to all natural streams and lakes, reservoirs or impoundments... unless excepted on the basis of existing irreparable conditions which preclude such use". EPA is unable to find any specific exceptions applicable to Boulder Creek; therefore, it appears that monitoring and impact analyses for toxic constituents should be based upon the standards identified at NAC 445A.1236.

The FEIS indicates that monitoring and mitigation would be based upon NDEP's Profile I reference values for water quality. While EPA understands that BLM has 2008 and 2010 Instructional Memoranda that recommend water resource data be coordinated with the State's water pollution control permit, which is based on Profile I values (as cited in response to comment F2-3), it is unclear how this direction is reconciled where more stringent standards apply.

During our April 11, 2014 conference call, BLM suggested that monitoring for exceedance of Profile I reference values for arsenic and antimony would ensure compliance with applicable standards (including aquatic life standards) for all constituents of concern. The rationale provided was that not only are the arsenic and antimony Profile I values lower than the other potentially applicable standards (aquatic life, stock water), but because arsenic and antimony propagate through groundwater more rapidly than the other constituents of concern, detection of these metalloids would provide ample early warning to any possible seepage. In response to EPA's request for the technical basis for this assumption, BLM provided a memorandum stating that monitoring for Profile I reference values for *sulfate* and *nitrate* would ensure such compliance for the same reason. The memorandum appears to assume that any detection would be the result of new seeps that emerge directly into Boulder Creek; however, the Dee site has existing seeps receiving mine drainage. Seeps AR09, 36 and 05, in particular, appear to at least occasionally flow to Boulder Creek. These seeps currently have sulfate, nitrate, arsenic, antimony, and pH values in excess of the Profile I values. It is unclear whether these seeps might exceed aquatic life standards for selenium, cadmium, chromium, copper, or lead because the reporting limits for those constituents are above the applicable standards. Should the proposed activities for the Arturo mine increase flow at these seeps, water might enter Boulder Creek more regularly. This water could be expected to exceed the applicable standards for constituents other than sulfate and nitrate.

> **Recommendation:** Surface water quality impact assessment, monitoring and mitigation should be based upon the most stringent applicable water quality standards; this includes the monitoring and mitigation proposed in appendix B of the FEIS, and the monitoring committed to by BLM on our April 11, 2014 teleconference. It appears that these standards for Boulder Creek would be those listed specific to Rock Creek at NAC 445A.1522 and the toxic materials standards at 445A.1236. The analysis for potential impacts to surface water quality should be revised to reference these standards as the basis for determining the significance of potential impacts. Doing so may or may not affect BLM's conclusions regarding potential impact significance.
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> Monitoring and impact analysis should employ detection and reporting limits that are appropriate for the standards each constituent is being compared against.

Monitoring and Mitigation Plan lacks specificity.

In our comments on the DEIS, EPA cited a lack of specificity in regard to monitoring and mitigation. The FEIS includes the Arturo Mine Monitoring and Mitigation Plan in Appendix B. EPA appreciates the measures incorporated into this plan, but requests additional information and revision in a number of areas. For example, the Monitoring and Mitigation Plan indicates that, if changes in surface water or groundwater chemistry exceeding NDEP Profile I standards are found to occur, "accelerated monitoring" would be instituted. Other than the example provided of "i.e. monthly sampling", it is not clear what "accelerated monitoring" refers to. Based upon our April 11, 2014 conference call, EPA understands that this accelerated monitoring program may include the use of more stringent monitoring

criteria for various constituents, and other potential elements. This was not clear from the text of the FEIS.

Monitoring measure SW-2 stipulates that monitoring of surface seeps and springs would take place bi-annually, and the parameters of pH, conductivity, and spring temperature would be monitored. It is not clear why only these 3 parameters would be monitored. In the absence of monitoring data for constituents such as arsenic, antimony, selenium, and others, the responsible regulatory agencies would be unable to determine whether these seeps represent a risk to surface water quality at the nearby Boulder Creek or whether they pose a threat to wildlife that may use any standing water.

> **Recommendation**: The Arturo Mine MMP should be revised with regard to water quality management. A more complete description of the "accelerated" monitoring program should be provided. Measure SW-2 should be revised to require monitoring of all Profile I water quality constituents against the most stringent applicable water quality standard.

Partial Pit Backfill Alternative

In our comments on the DEIS, EPA observed that a partial backfill alternative that includes the construction of the West WRDF with height and slope dimensions similar to those under the Proposed Action and, therefore, a reduced overall footprint, could offer considerable environmental benefits over the proposed action. In discussion with BLM since the publication of the Final EIS, EPA has come to understand that the partial backfill alternative was deemed non-viable or infeasible because it would sanitize the mine pit, thereby making future mining activity in the Arturo pit uneconomic. The NEPA document does not explicitly state this. It is, therefore, unclear to the reader why this alternative was not pursued further with designs that would further reduce environmental impacts.

> **Recommendation:** The ROD should clearly indicate why a redesigned Partial Backfill Alternative, which might reduce the overall environmental impacts of the project, was not further considered. If all backfill alternatives are non-viable for Barrick because these alternatives would make further mining activity economically infeasible, the ROD should clearly indicate this.

Waters of the United States and Clean Water Act Compliance

EPA has continuing concerns about the jurisdictional status of Boulder Creek. As indicated in our comments on the DEIS, EPA does not concur with the Army Corps of Engineer's August 13, 2010 final determination that Boulder Creek is hydrologically isolated from the Humboldt River and the nearest Traditional Navigable Water, and is, therefore, not a water of the United States subject to CWA jurisdiction. We have communicated these concerns to the Corps both before and following the Corps' August 2010 determination. In accordance with Corps policy, the jurisdictional determination for Boulder Creek will be subject to reconsideration in August of 2015.

Air Quality

In our comments on the DEIS, EPA noted that, based upon the stated total emissions attributable to haulage of mill grade ore material from Arturo Mine to the Barrick Goldstrike facility, it seemed possible that the project could result in violations of the National Ambient Air Quality Standard for 5

criteria pollutants. In response to EPA's comments, additional modeling work was performed, the results of which were incorporated into the FEIS. This revised analysis indicates that the numbers provided in the DEIS were in error and the NAAQS would be maintained under all alternatives. EPA appreciates the additional work performed and the update to this information.